THE FOLLOWING ARE THE ENGLISH TRANSLATION OF ANNEXES TO THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT (ARTICLE 34):

Amended Sheets (Pages 15 and 16)

As enclosed to IPRP

Claims

1. A reactor for preparing chlorine from hydrogen chloride by gas-phase oxidation by means of oxygen in the presence of a heterogeneous catalyst in a fluidized bed (2), with gas-permeable plates (17) being located in the fluidized bed (2), wherein the gas-permeable plates (17) are connected in a thermally conductive manner to a heat exchanger (9) located in the fluidized bed (2), wherein the thermal conductivity of the gas-permeable plates (17) is greater than the thermal conductivity of the fluidized bed (2).

2. A reactor according to claim 1, wherein the heat exchanger (9) has tubes (16) which run horizontally in the fluidized bed and are connected to the gas-permeable plates (17).

3. A reactor according to claim 2, wherein the horizontal tubes (16) connect vertical heat exchanger tubes (15) of a shell-and-tube heat exchanger (9).

4. A reactor according to claim 1, wherein the gas-permeable plates (17) connect vertical plates of a plate heat exchanger to one another.

5. A reactor according to claim 1, wherein channels or tubes through which a heat transfer medium flows run through the gas-permeable plates (17).

6. A reactor according to any of claims 1 to 5, wherein perforated plates are used as gas-permeable plates (17).

7. A reactor according to any of claims 1 to 5, wherein ordered or unordered mesh structures are used as gas-permeable plates.

8. A reactor according to any of claims 1 to 7, wherein the hydrogen chloride and the oxygen are introduced into the fluidized bed via a windbox (3) and a gas distributor (4).

9. A reactor according to claim 8, wherein at least one perforated plate is used as gas distributor (4).

10. A reactor according to claim 8, wherein at least one plate provided with gas distributor nozzles is used as gas distributor (4).

11. A reactor according to any of claims 8 to 10, wherein an impingement device is located in the windbox (3) above the gas inflow opening.

12. A reactor according to claim 11, wherein the impingement device is a flat, round-domed or funnel-shaped metal sheet arranged transverse to the inflow direction.

13. A reactor according to any of claims 1 to 12, wherein a granular fluidized-bed material comprising the heterogeneous catalyst is used to form the fluidized bed (2).

14. A reactor according to any of claims 1 to 13, wherein the interior walls of the reactor (21), gas-permeable plates (17), heat exchanger surfaces, interior walls of the windbox (3) and the gas distributor (4) are made of steel or nickel alloys.

15. A reactor according to any of claims 1 to 13, wherein the gas distributor (4) is made of a ceramic material.

16. A process for preparing chlorine from hydrogen chloride by gas-phase oxidation by means of oxygen using a reactor according to any of claims 1 to 15.